

A New Species of *Capnia* (Plecoptera: Capniidae) from Arizona^{1, 2}

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Intensive collecting during the last two years as part of a study on the Nemouridae of Western North America resulted in the discovery of an interesting species of *Capnia*. Since a revision of the western Capniidae was recently completed by Nebeker and Gaufin (1968), it was felt that a name should be given to this species at this time. This paper describes a new species of *Capnia* from Arizona which is quite different from most *Capnia* in its morphological and ecological characteristics.

Capnia (*Capnia*) *arizonensis*, NEW SPECIES

MALE.—Wings brachypterous. Length of forewing 3.5 mm; length of body 4.5–5.5 mm. Body and appendages brown; wings hyaline. First nine abdominal tergites without special modifications. Supra-anal process (epiproct) reflexed, extending forward nearly to margin of eighth tergite, spatulate dorsally, slightly narrower behind, the apex with a sharp median spine, in line with ventral surface of process in lateral view. Process narrow laterally with a fairly constant width throughout (Figs. 1, 2).

FEMALE.—Wings macropterous. Length of forewing 6.0 mm; length of body 6.0–7.0 mm. Body color brown; wings hyaline. Dorsal broad membranous stripe on abdomen extends from tergite one to eight. Subgenital plate not well defined, with a small broadly rounded projection medially. Eighth abdominal sternite recessed slightly on either side of subgenital plate. Oblong, darkly pigmented sclerotized areas on the lateral posterior margins of the eighth sternite. Larger L-shaped sclerotized patches centered laterally on the ninth sternite (Fig. 3).

MATURE NYMPH.—Body length 6.0–7.5 mm (excluding antennae and cerci). Segments of cerci 24–26, of antennae 40–42. Maxilla with lacinia with 3 teeth at apex. Fourteen to 15 stout hairs on inner apical margin. Galea equal in length to lacinia, tapering to a point and clothed with stout bristles. Maxillary palpi with 5 segments. Labium with glossae and paraglossae equal. Palpi short, equal in length to glossae and paraglossae, with 3 segments, second longer than the first and third. Mandibles similar, with two cusps outside, outer cusp blunt, a small cusp in center and a fringe of fine bristles on inner half. Y-ridge of mesosternum as in Fig. 4.

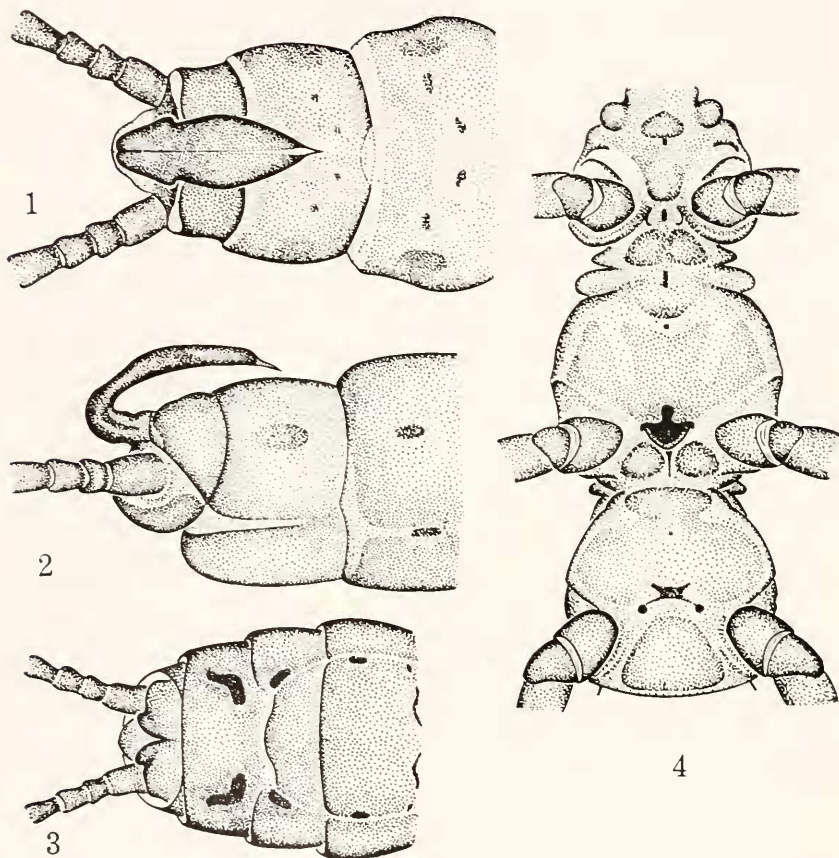
TYPES.—Holotype male, allotype female, and 65 male and 17 female paratypes, Big Bug Creek, Hwy. 69, 10 miles south of Mayer, Yavapai Co., Arizona, 8-IV-68, R. W. Baumann (UU). Additional paratypes as follows: ARIZONA: Small mountain stream 15 miles south of Globe, Gila Co., 5-IV-66, Joe Schuh, 6 males, 3 females, 5 nymphs (SGJ); East Verde River between Payson and Pine, Gila Co., 6-IV-66, Joe Schuh, 1 female.

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2 nymphs (SGJ); San Carlos River near springs, 40 miles east of Globe, Gila Co., 2-IV-68, W. L. Minckley, 2 males (UU); East Verde River, Hwy. 87, 5 miles north of Payson, Gila Co., 8-IV-68, R. W. Baumann, 58 males, 12 females (UU); Yaeger Canyon Creek, Hwy. 89, 3 miles southwest of Mingus Mountain Summit, Yavapai Co., 9-IV-68, R. W. Baumann, 3 males, 1 female (UU).



FIGS. 1-4. FIG. 1.—*Capnia arizonensis*, dorsal view of part of male abdomen. FIG. 2.—*C. arizonensis*, lateral view of part of male abdomen. FIG. 3.—*C. arizonensis*, ventral view of part of female abdomen. FIG. 4.—*C. arizonensis*, thoracic sternum of nymph, ventral view.

Specimens are deposited in the collections of the University of Utah (UU) and S. G. Jewett, Jr. (SGJ).

Nymphs were taken at the type locality and at both additional localities collected by the senior author.

ECOLOGICAL NOTES.—The localities where all specimens to date have been collected are between four and five thousand feet in elevation. Two localities, Big Bug Creek and Yaeger Canyon Creek are intermittent streams which dry up during the summer months. From the number of specimens collected, it is assumed that collections were made near the peak of emergence. This places the emergence time in April, which is late for most *Capnia*. It is also interesting because the floral surroundings of the type locality belonged to the Sonoran type, and the air temperature was near 80° Fahrenheit.

DISCUSSION.—This species is near *C. projecta* Frison and several other species in this complex. It differs principally in the broadness of the male supra-anal process and by the brachypterous condition of the wings of the male.

The following key will separate *C. arizonensis* from the closely related *Capnia* species found in the southwestern United States.

MALES

1. Supra-anal process flattened dorso-ventrally.....2
Supra-anal process not flattened dorso-ventrally.....3
2. Supra-anal process wide throughout its length, tapering abruptly at apex, appearing as a broad spatula in dorsal view, tip developed into a sharp delicate spine; wings brachypterous....*arizonensis*
Supra-anal process tapering from wide base to pointed apex, appearing as an elongate triangle in dorsal view, tip pointed but not developed into a sharp spine; wings macropterous....*utahensis*
3. Spine at tip of supra-anal process thin and delicate, one seventh length of supra-anal process, not bent downward at tip.....*projecta*
Spine at tip of supra-anal process not delicate, one third length of supra-anal process, bent downward at tip.....*limata*

FEMALES

1. Eighth sternite mostly membranous, with small sclerotized patches only on lateral margins.....2
Eighth sternite sclerotized, not mostly membranous, heavy sclerotization medially.....3
2. Posterior edge of subgenital plate with small pointed projection medially.....*projecta*
Posterior edge of subgenital plate with broadly rounded projection medially.....*arizonensis*
3. Seventh and 8th sternites united by median sclerotized connection.....*limata*
Seventh and 8th sternites not connected, separated by membranous area.....*utahensis*

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(THE ENTOMOLOGIST'S RECORD, continued from p. 74)

A Record of *Rachiceridae* from New York (Diptera): On July 25, 1968, I found a male specimen of *Rachicercus obscuripennis* Loew on the inside of my garage window at Ludlowville, New York.

Apparently no species of *Rachicercus* is known from New York. Although *R. nitidus* Johnson has been recorded from as far north as Maine and New Hampshire and *R. fulvicollis* Walker from Massachusetts, most records of this genus are from well south of New York. *R. obscuripennis* has been collected in Maryland, Virginia, Indiana, Illinois, Michigan, Missouri and Kansas. The 1968 record from New York appears to be an interesting range extension.

In life, *R. obscuripennis* closely resembled in general appearance and activity a specimen of *Sylvicola* sp. (Anisopodidae) and I suspect collectors in the past may have overlooked the rarely collected *Rachicercus* for this reason.—L. L. PECHUMAN, Department of Entomology and Limnology, Cornell University, Ithaca, N. Y. 14850.

New records for Orthoptera.—*Paropomala zeyomingensis*: Jacques Helfer of Mendocino, California, has added a new distributional record for this species for New Mexico when he collected 3 females and 1 male on the Mescalero Dunes, New Mexico, September 1, 1961. Another new record for Nevada should be noted as David Rentz, Kensington, California, collected the same species at Soldier Meadows, Nevada during the summer of 1968.—GLENN E. WIXOM, Oroville, California 95965.

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